Texas Birth Statistics

or,

So You've Processed a Certificate, Now What?
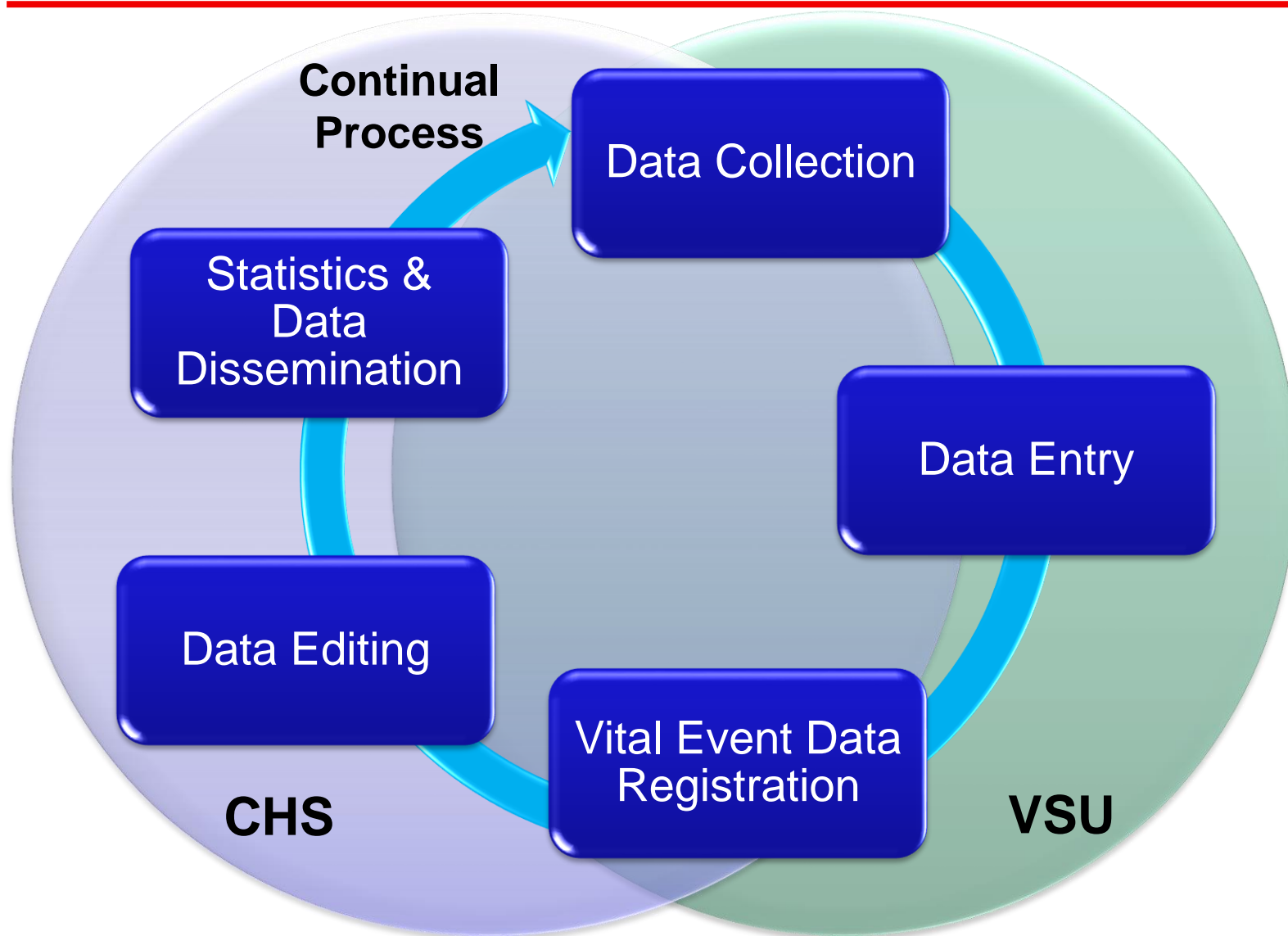
Jeff Swanson, PhD
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BIRTH DATA, STATISTICS, AND REPORTS

Importance

Uses

Who

How

BIRTH DATA, STATISTICS, AND REPORTS

Birth Certificates are Important

1. Permanent Legal Records
2. Population Estimates and Projections
3. <u>Many of our most important statistics</u>
   - Typical Ones
     - Birth Rates
   - But Not Just Those
     - Preterm & Low Birth Weight Rates
     - Rates of Breech Birth
     - Smoking during Pregnancy
   - Even Hot-Button Issues
     - Early deliveries by cesarean/induction with no <u>apparent</u> medical reason

Birth Certificates are Important

4. Passive Surveillance:
   - Assess Magnitude
   - Track Trends
   - Determine Groups and Locations at Risk

5. Research
   - Assess predictors of low birth weight delivery.
   - Adverse birth outcomes by smoking status

6. Track Migration Patterns

7. Statistics that Inform Policy and Decision Making
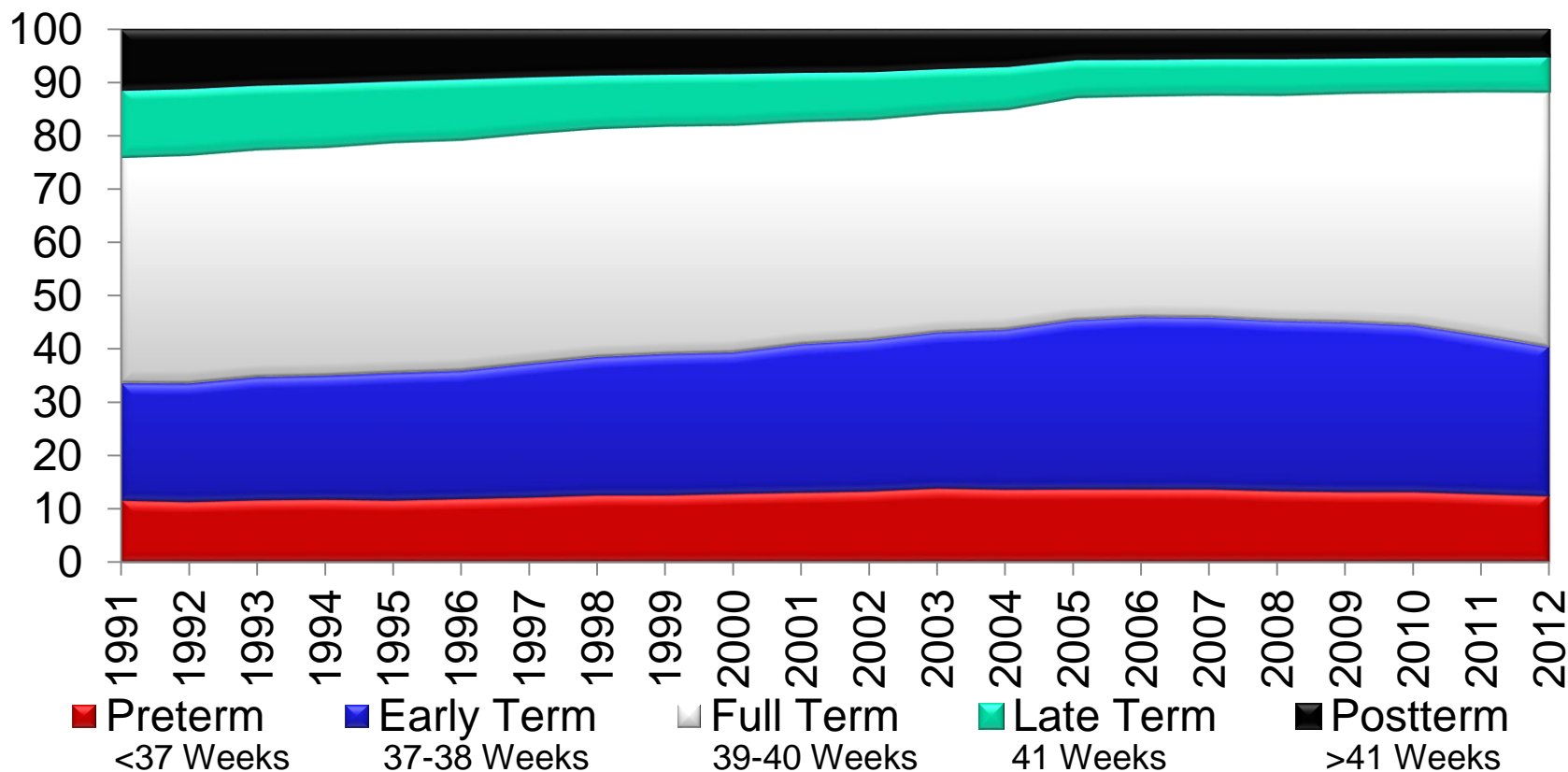   - Tracking outcomes by Medicaid vs. private/other insurance

Importance

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Who

How

BIRTH DATA, STATISTICS, AND REPORTS

Assess Trends Across Time

Percent of Live Births by Weeks of Gestation, Texas, 1991-2012

Legend:
- **Preterm** <37 Weeks (Red)
- **Early Term** 37-38 Weeks (Blue)
- **Full Term** 39-40 Weeks (White)
- **Late Term** 41 Weeks (Green)
- **Postterm** >41 Weeks (Black)

Notes: Calculated Weeks of Gestation Based on Last Normal Menses Date
Percentages are of All Live Births to Texas Residents in which the Last Normal Menses Date was Known
Data Sources: Texas Department of State Health Services, Center for Health Statistics, Birth & Death Statistical Files, Texas Residents
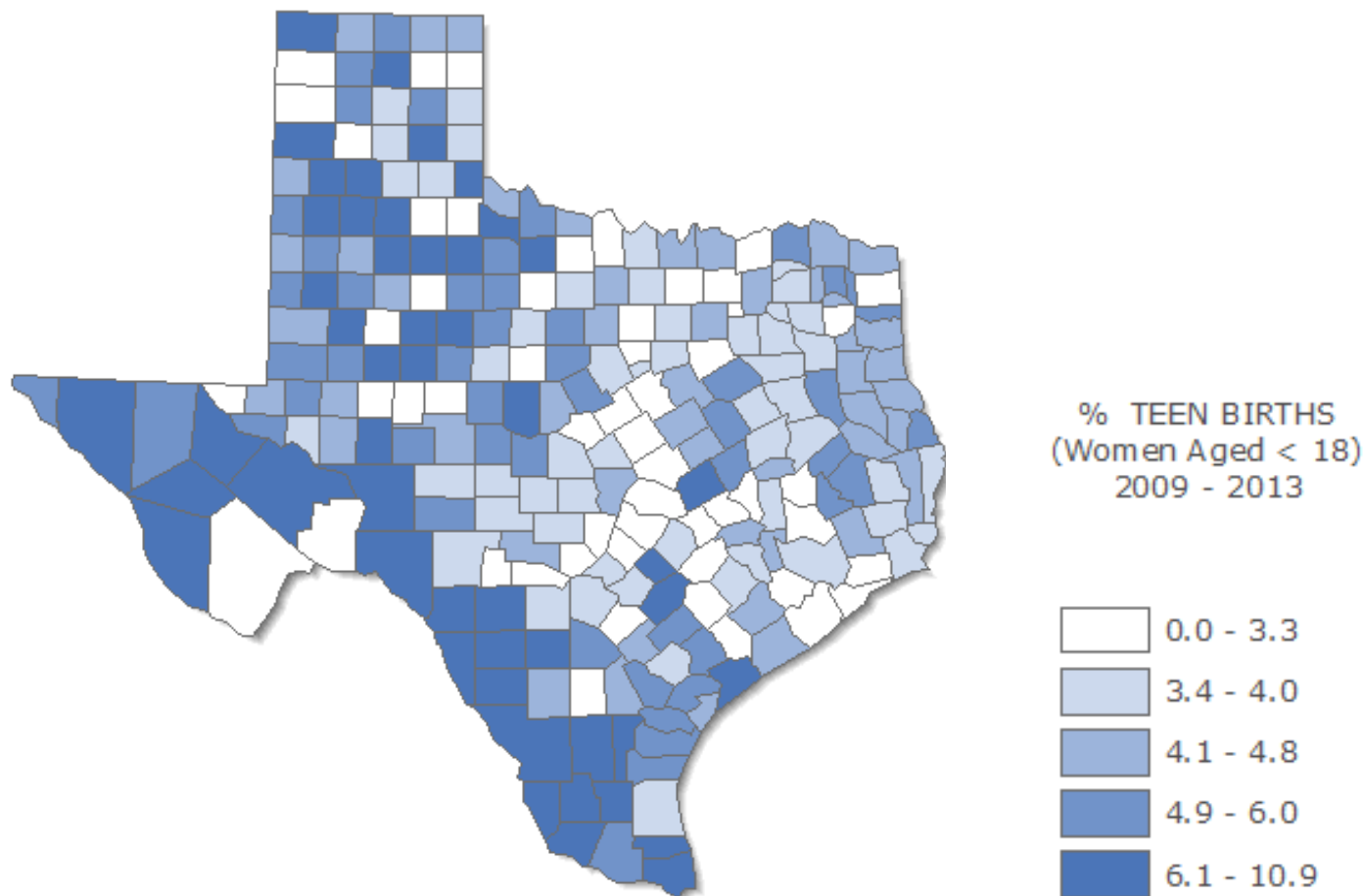
Assess Trends Across Time

Percent of Live Births Resulting from Fertility Treatment, Texas, 2005-2012
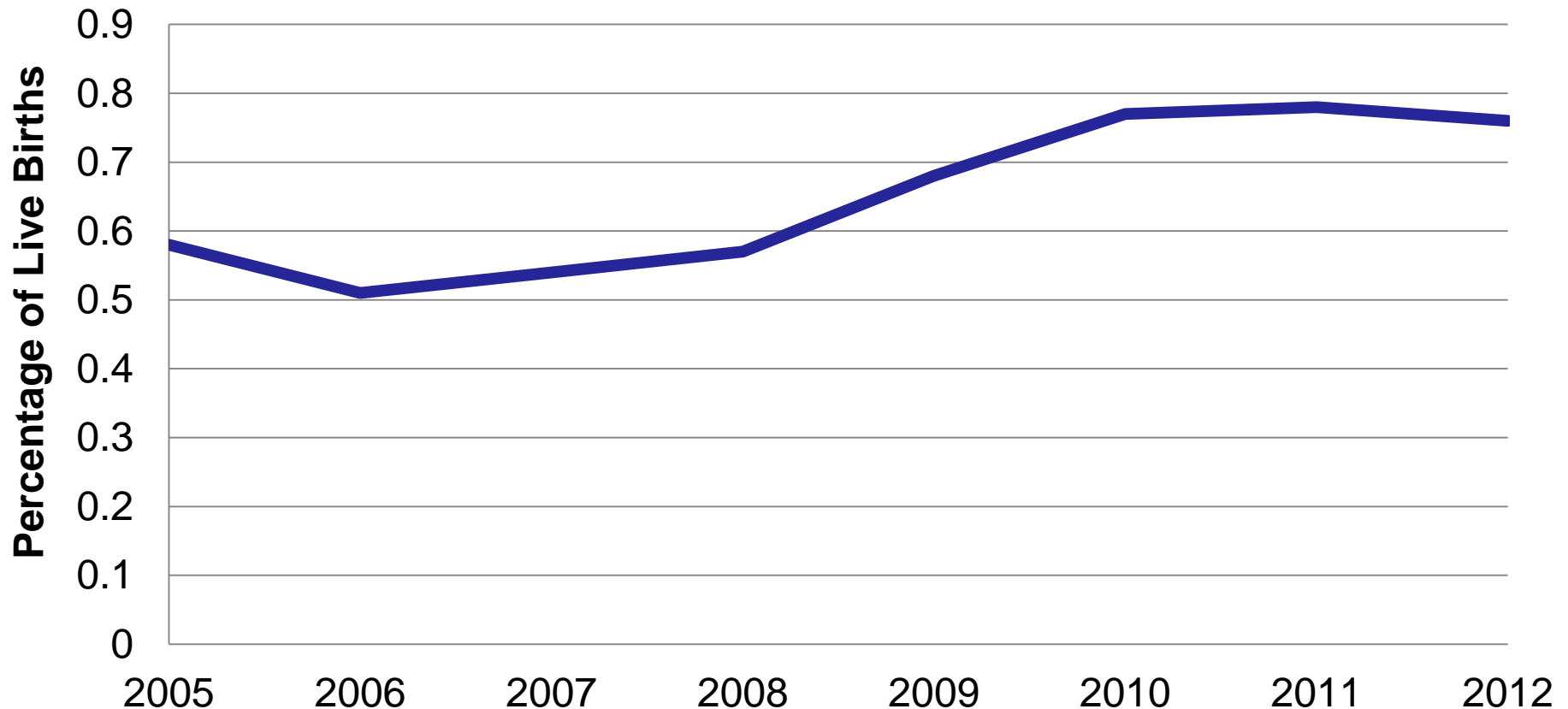
Compare Regions

Percent Live Births to Mothers Less Than 18 Years of Age
by County of Residence, Texas, 2009-2013

% TEEN BIRTHS
(Women Aged < 18)
2009 - 2013

- 0.0 - 3.3
- 3.4 - 4.0
- 4.1 - 4.8
- 4.9 - 6.0
- 6.1 - 10.9

Compare Groups

General Fertility Rates
(All Live Births / Population Women Ages 15-44)
By Race/Ethnicity, Texas, 2003-2013
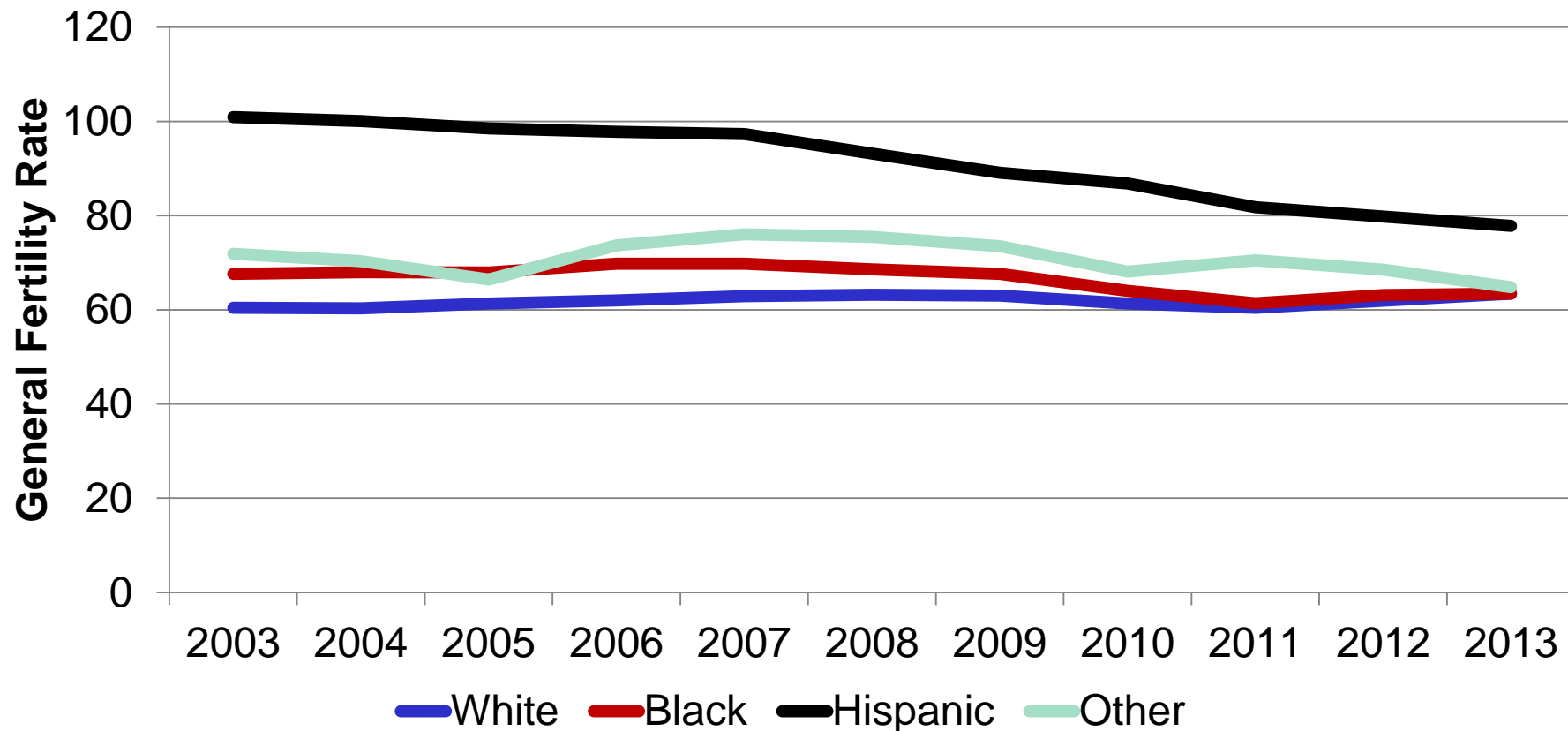
Determine Migration Patterns & Shortage Areas

- Brazoria County Residents:
  - 4,675 Live Births in 2013
  - Only 22.3% Occurred in Brazoria County
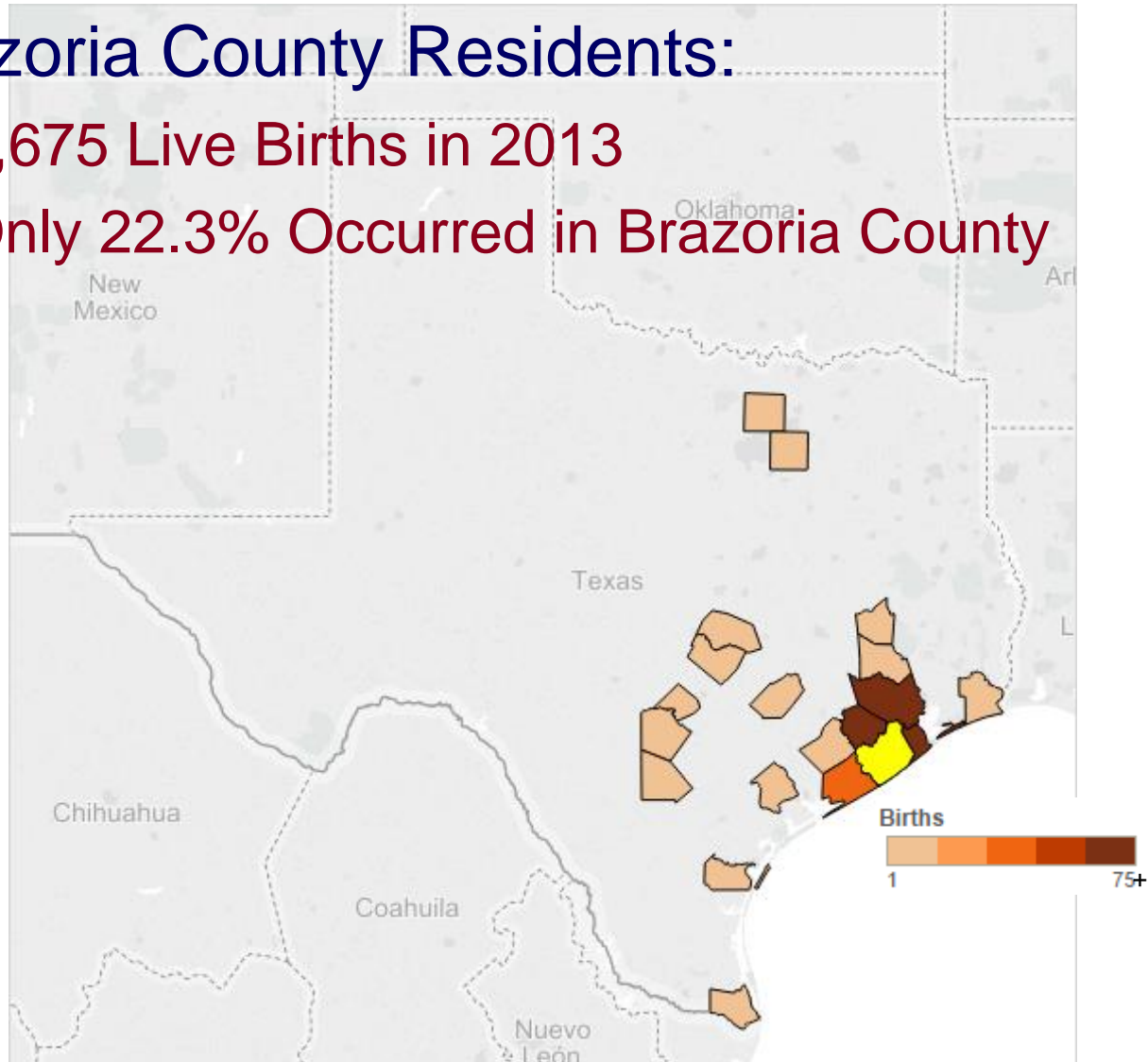
Perform Advanced Analyses

This <u>one</u> analysis uses 45% of the items on the medical portion of the birth certificate!

Factors Predicting Non-Medically Indicated Early Term Cesareans and Inductions, Texas Birth Certificate, 2012

Negelkerke R^2=0.08

Importance

Uses

Who

How

BIRTH DATA, STATISTICS, AND REPORTS

A Variety of Stakeholders Use these Data & Statistics

- Legislature
- Media
- Other State Departments
- Federal Health Departments
- Non-Profit Groups
- Elementary Schools
- Students
- Research Institutions
- Local Health Departments
- Insurance Providers

Groups Collaborate on Shared Interests

Example: National & State Government, and Advocacy Groups Collaborating to Reduce Infant Mortality

Importance

Uses

Who

How

BIRTH DATA, STATISTICS, AND REPORTS

Public Statistics: Annual Reports

TEXAS
Department of
State Health Services

TEXAS
Department of
State Health Services

Advanced   Inicio en español | Text Size: ⊕ ⊖

Topics: A B C D E F G H I J K L M N O P Q R S T U V
W X Y Z All

| Home | About Us | News | I am a... | I want to... | Resources | Find Services |

DSHS Center for
Health Statistics

About Vital Statistics

Vital Statistics Annual
Reports

Infant Mortality Rates

Home > Center for Health Statistics Home > Vital Statistics Annual Reports

Vital Statistics Annual Reports

The vital statistics annual reports include data on vital events such as births, deaths, pregnancies, fetal deaths, abortions, marriages and divorces. Tables and narratives are created for the most frequently requested topics as the data become available. To find information on a particular topic, please locate

Annual Reports

- 2013
- 2012
- 2011

- 2006
- 2005
- 2004

TABLE 10
LOW BIRTH WEIGHT (< 2,500 grams) INFANTS
TEXAS, 2013

COUNTY	TOTAL NUMBER	TOTAL PERCENT	WHITE** NUMBER	WHITE** PERCENT	BLACK NUMBER	BLACK PERCENT	HISPANIC NUMBER	HISPANIC PERCENT
TEXAS	32,175	8.3	12,129	7.7	5,837	13.2	14,209	7.7
REGION 1	1,131	9.0	541	8.6	115	16.0	475	8.4
	8,165	8.1	3,674	7.5	2,000	13.1	2,401	

http://www.dshs.state.tx.us/chs/vstat/annrpts.shtm

Texas Health Data
Center for Health Statistics

| Home | Health Facts Profiles | Population & Demographics | Birth Outcomes | Causes of Death | Disease & Trauma Surveillance | Healthcare Utilization & Quality | Health Risks & Preventions | Healthcare Workforce & Facilities | Definitions |

Birth Indicators (Outcomes and Risk Factors)

Demographic Cross Tabs

Texas Births by Age of Mother

Percentages are defined as the number of births within the indicator divided by all births
Unknown values are excluded from the denominator in the calculation of percentages
Low values are masked with ---
Displaying age of mother: All   Marital Status of Mother: All   Race/Ethnicity of Mother: All   Education Level of Mother: All

Area	Indicator Type	Indicator	14 and younger	15-17	18-19	20-29	30-39	40 and older	Unknown age
Texas	All Births	All Births	526	11,719	25,785	207,365	131,867	9,833	15
		Smoking during Pregnancy	---	267	1,215	11,230	3,852	234	0
	Birth weight	Very Low Birth Weight	14	176	328	2,539	2,063	239	---
		Low Birth Weight	62	1,104	2,280	16,131	11,306	1,288	---
		Normal Birth Weight	464	10,615	23,504	191,215	120,540	8,542	10
	Length of Pregnancy	Not Premature	417	9,803	22,052	179,653	112,519	7,670	---
		Premature	93	1,676	3,191	23,311	16,340	1,823	---
	Birth Plurality	Single Birth	516	11,547	25,361	201,870	126,016	9,113	13
		Twin Birth	10	169	416	5,330	5,585	669	---
		Triplet Birth	0	---	---	130	234	43	0
		Quadruplet or Higher	0	0	0	21	28	---	0
	Prenatal Care	Prenatal Care: Began First Trimester	184	4,947	12,176	118,580	87,376	6,086	---
		Prenatal Care: Began Second Trimester	179	4,060	8,127	53,400	27,146	2,281	---
		Prenatal Care: Began Third Trimester	87	1,206	2,345	13,899	6,442	551	0
		No Prenatal Care	41	751	1,528	10,175	4,939	444	---
	Prior Births, Living or Dead	Four or More Prior Births	0	---	15	6,290	11,479	1,773	---
	Prior Live Births	Spacing <18 Months	---	519	2,109	16,161	6,106	294	---
		Spacing >=18 Months	---	678	4,434	108,143	92,764	7,478	---
	Sex	Female	269	5,728	12,544	101,229	64,361	4,861	---
		Male	257	5,991	13,241	106,136	67,506	4,972	---
	Type of Delivery	First Cesarean Delivery	115	2,398	5,593	41,681	30,006	3,051	---

Directions for Use:
--Select Display Variables below to create a custom table of births in Texas.
--Data can be displayed as counts or percentages.
--Filters change the underlying data, but do not change the layout of the table.
--Data can be displayed at various geographic levels aggregated at the county level.

Select Display Variables:

Indicators   (All)

Years   2013

Columns across
Age of Mother

Select Display Value:
Birth Count

Select Demographic Filters:

Age of Mother
(All)

Race/Ethnicity of Mother
(All)

Marital Status of Mother
(All)

Education Level of Mother

State

http://healthdata.dshs.texas.gov/VitalStatistics/Birth

Migration for Birth Reports

Reports

Migration for Birth

Data on migration for birth provide important information for health c
Health Statistics publishes the Migration for Birth report to provide inf
counties of residence of the mothers. We report information on how h
patients. This report tabulates birth migration information for each Te
objectives:

- To identify areas where services are present or where Texas re
  patterns of obstetrical services throughout the state.
- To provide specific local and regional information about potenti
  county residents are giving birth.

Migration for Birth Report, 2012 [3,657K]

Migration for Birth Report, 2011 [3,463K]

Migration for Birth Report, 2010 [3,198K]

Migration for Birth Report, 2009 [3,706K]
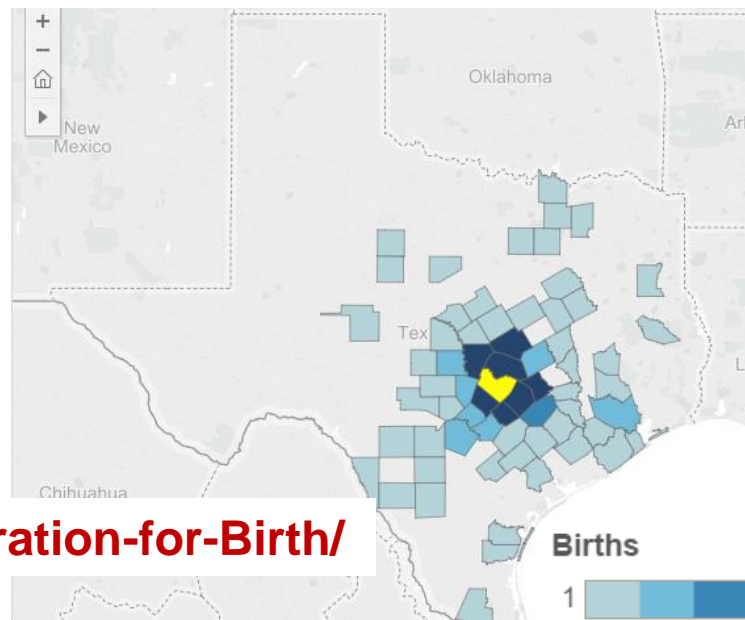
Migration for Birth Report, 2008 [3,258K]

The 1998 through 2006 Migration for Birth reports in PDF format are

https://www.dshs.state.tx.us/chs/pubs/Migration-for-Birth/

New Query System

Migration for Birth Report: In-Migration
Travis County, 2013

County Summary

County of Mother's Residence	Births to County Residents	Non-Hospital Births	Total Out-Migration	Service Ratio
Travis	15,718	532	1,260	92.0%

Births

1 — 75+

http://healthdata.dshs.texas.gov/Birth/Migration

Types of Requests

- VSU:
  - Copies of Certificate
  - Summary Birth Indexes
  - Contact: registrar@dshs.state.tx.us
- CHS:
  - Publicly Available Statistics
    - Small Counts Suppressed
  - Non-Public Statistics
  - Non-Public Data
  - Contact: vstat@dshs.state.tx.us

Release of Non-Public Data & Statistics are Limited

- Research Use: Approved IRB Application
- Other Use, at Least One Approved:
  - IRB Application
  - Data Use Agreement (Internal DSHS Public Health Requests)
  - Memorandum of Understanding/Contract (External to DSHS)

DATA QUALITY AND IMPROVEMENT

DATA QUALITY AND IMPROVEMENT

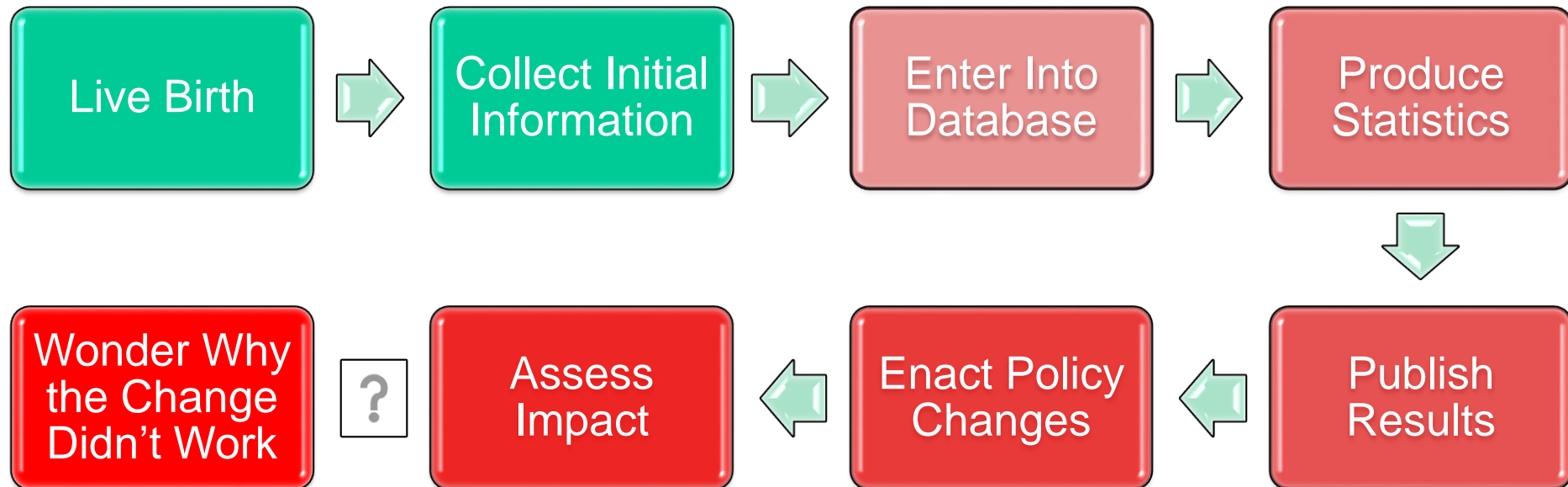# Many Texas Births and Many People Registering Them

~400,000 Every Year

~1,000 TER Registrars

Garbage In = Garbage Out

- Important to prevent "garbage data" from being introduced early on.
- The longer a problem goes before being noticed:

Data Error

Live Birth → Collect Initial Information → Enter Into Database → Produce Statistics

Wonder Why the Change Didn't Work ← ? ← Assess Impact ← Enact Policy Changes ← Publish Results ← Produce Statistics

Accuracy & Standardization

What's Being Done at CHS?

Pass the Baton

DATA QUALITY AND IMPROVEMENT

Accuracy and Standardization

- All Parts In Use
    - All Need Accurate Data
- Nationally Standardized Certificates & Reference Materials
- Texas Certificates closely match U.S. Standard
- Texas Standardized Reference Materials
    - Encourage Consistent Use Everywhere

Standardized Dictionary

- Standardized Definitions
- Key words, common abbreviations, Do's and Don'ts
- Preferred Data Sources and Alternates

Texas Registration Handbook

- Customized for Texas
  - Instructions for how to enter into Texas Electronic Register (TER)
  - Texas-specific additions (ex. ImmTrac)
  - Texas-specific laws

Mother and Facility Worksheets

Mother's Worksheet for Child's Birth Certificate

FOR HOSPITAL USE ONLY:

MOTHER MR# _____   NEWBORN MR# _____

MEDICAID # _____   DELIVERING DR _____   RM # _____

The information you provide on this worksheet is used to create your child's birth certificate. The birth certificate is a legal document used to prove your child's age, citizenship and parentage. Your child will use the birth certificate throughout his/her life. The State of Texas safeguards against the unauthorized release of identifying information from birth certificates to protect the confidentiality of parents and their child.

Please PRINT your responses carefully and accurately as errors are difficult and expensive to correct.

CHILD'S PLACE OF BIRTH

Name of Hospital or Location	Address	State

County	City	Zip Code

CHILD'S INFORMATION

Time of Birth   Date of Birth   Plurality (please circle one)

Mother and Facility Worksheets

Medical Data Worksheet for Child's Birth Certificate

This form to be completed by hospital staff. This data will be used to populate the medical data portion of the birth certificate for the newborn. The medical data is required to be reported within five days of the birth. **[HSC §192.003]**

PATIENT REFERRENCE:

MOTHER MR# _____   NEWBORN MR# _____

MOTHER'S NAME _____   NEWBORN NAME _____

MEDICAID# _____   DOB _____

DELIVERING DR _____   DATE AOP SENT _____

MOTHER TRANSFERRED _____   SOURCE OF PAYMENT FOR DELIVERY _____

☐ **Born at Facility**   ☐ **Born En Route**   ☐ **Foundling**   ☐ **Home Birth**

Prenatal Care   ☐ Yes ☐ No ☐ Unknown

Date of First Visit ____/____/_____

Date of Last Visit ____/____/_____

Total Number of Prenatal Visits for this Pregnancy: _____

Date Last Normal Menses Began ____/____/_____

Source of Prenatal Care (check all that apply)

☐ None   ☐ Midwife

☐ Hospital Clinic   ☐ Other, Specify _____

☐ Public Health Clinic   ☐ Unknown

☐ Private Physician

Risk Factors in this Pregnancy (check all that apply)

Accuracy & Standardization

Current Quality Improvement Efforts

Pass the Baton

DATA QUALITY AND IMPROVEMENT

Birth Certificate Improvement Working Group

- <u>Work with</u> Physicians and Medical Directors
- Comparison of Outcomes from Birth Certificate vs. Other Data Sources

Quarterly Reports to Facilities

- Reports to Facilities on Rates & Percentages from Birth Certificate

Quarterly Reports to Facilities

- Reports to Facilities on Results from Quarterly Edits

```
/********************************
/* Compute for the report.
/********************************
/*what I am doing here is that I
/*then when the report is made I
/********************************

data QR.birth2  trash ; /*creating

    set QR.birth1;

    by facname;
    where inst_typ='1';
/*initializing the new variables.

        length wrongdob notTX not
        wrongdob=0;
        notTX =0;
        notcnty=0;
        resstate=0;
        quarterofbirth=0;
        wrongmdob=0;
        attend_vs_fac=0;
    /*this is a counter for the nu
        births = 1 ;

/*making sure that date of births
        array dateqm{*} bs_bday b_
                    mnsdt_day
        do i=1 to dim(dateqm);
        if dateqm{i} = '?' the
        end;
```

Selected List of Variables, Statistics Affected, and References by Proposed Type of Use in Quarterly Edits and Reports to Facilities

DSHS Center for Health Statistics, 3/24/2015

Variable Name	Statistic(s) Affected
	Nonmedically Indicated Early Term Cesareans and Inductions/Early Term Deliveries/Early Elective Deliveries (NMI EED)
	Rates/totals by month
	Mother's Age & Related Rates/Ratios
	Calculated Gestation

Case #	Birth Certificate Item #	TER's Current Value	Notes	Correct or Verify for this variable:
1	8B - Attendant Type	Other	Attendant Type Wrong for Hospitals (Should Be MD or DO)	
1	29 - Mother's Race	HISPANIC	There should be no listing of 'HISPANIC' in the 'Race' section	
1	59 - Obstetric Estimate	?	Estimate of Gestation, completed weeks. Range of Weeks should be between 17-52 weeks	
1	45 - Cigarette Smoking	0.5	Number of Cigarettes not a digit	
2	46 - Principal Source of Payment for This Delivery	PENDING MEDICAID	Payment should be from 1-4,8-9 and 'Payment Other' should NOT list MEDICAID	
3	43 - Date last Normal Menses Began	9/5/2053	Date of Last normal Menses Began out of range/missing. Date can be up to two years before date of birth. CHS needs this data to calculate gestation numbers.	

Data Collection and Reporting: TxEVER

- Collaborative project to implement a fully integrated and comprehensive electronic vital records system.
- Give your input!
  - https://www.dshs.state.tx.us/vs/field/The-TxEVER-Project/

News   I am a...   I want to...   Resources   Find Services

Home > Vital Statistics Unit > The TxEVER Project

The TxEVER Project

Announcing Texas Electronic Vital Events Registrar Project

The current statewide electronic system, Texas Electronic Registrar (TER), is deployed across registration districts and licensed institutions, including hospitals, birthing centers, funeral homes, medical examiners, and justices of the peace throughout Texas. The electronic birth record component of TER was implemented in 2004, with electronic death registration added to TER in 2006 and electronic marriage applications following in 2008. While TER is a stable system, it also is aged, both in terms of technology and infrastructure. Costs to maintain the database, ensure reliability and availability, and meet the state and federal data security requirements for safeguarding protected health information have risen.

The Texas Electronic Vital Events Registrar (TxEVER) Project proposes to implement a fully integrated and comprehensive electronic vital records system, which will include electronic registration and data collection for birth, death, fetal death, marriage, and divorce.

One goal of the project is to consolidate the following stand-alone systems into

Accuracy & Standardization

Current Quality Improvement Efforts

Pass the Baton

DATA QUALITY AND IMPROVEMENT

…And Then What Happens?

I data entered all this stuff, now what?

What is this?

Apoplex & Meagron	Burst & Rupture	Cut of the Stone
Dropsie & Swelling	Flocks & Small Pox	Grief
Jawfain	King's Evil	Lunatique
Muthered	Over-laid & Starved at Nurse	Planet
Quinsie	Rising of the Lights	Surfet
Teeth	Vomiting	Worms

What are "People Like You"!

- We can have such information because people like you in the past and now have given us:
  - Reliable data
  - Relevant data
  - Accurate data

- And due to the advances in technology, the information you give us can be up to the minute!

"The nomenclature (or the wording) is of as much importance in this department of inquiry as <u>weights and measures</u> in the physical sciences…"

~~William Farr

What is going on?

- Examine Problems

- Settle Policy Both Local and State or even on a National Level

- Allocate Dollars to Programs

- Investigate Patterns in Geographic Areas

What is Spellcheck?

- CAMBDOAN
- CAMBI
- CAMBIANE
- CAMBIANO
- CAMBIONE
- CAMBODAR
- CAMBODEAN
- CAMBODIA
- CAMBODIAN
- CAMBOIAN
- CAMBOODIAN
- CAMBOYA

- TAIMANESE
- TAIWAIN
- TAIWAINESE
- TAIWAN
- TAIWANASE
- TAIWANES
- TAIWANESE
- TAIWANESIAN
- TAIWANESIE
- TAIWANESS
- TAIWANESSE
- TAIWANIAN

- EL SALADOR
- EL SALAVADOR
- EL SALAVADORIAN
- EL SALAVDOR
- EL SALVADORANIAN
- EL SALVADOREAN

Where are we?
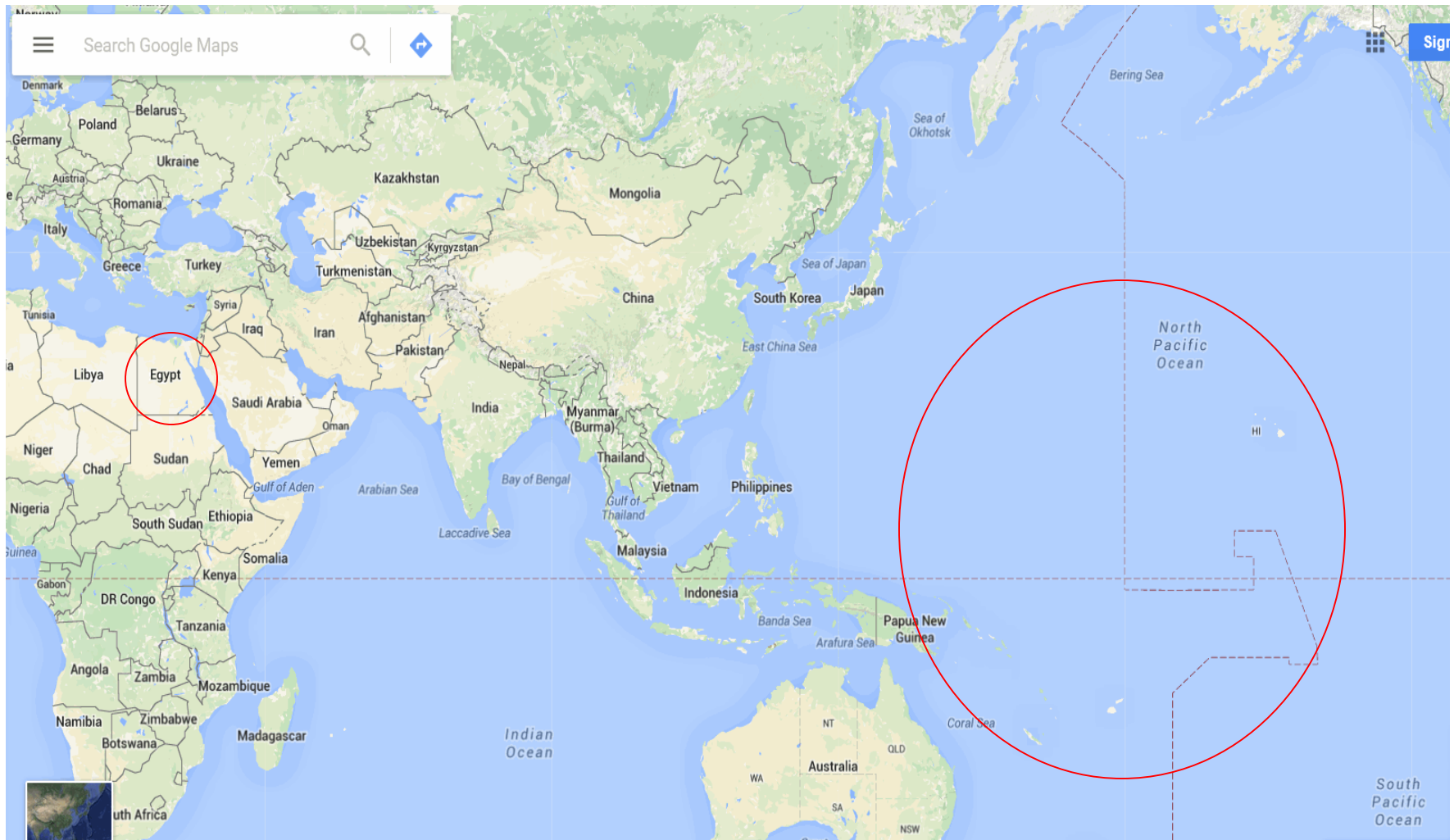
What is Ethnicity?

28. **Mother of Hispanic Origin?** (Check the box that best describes whether the mother is Spanish/Hispanic/Latina. Check the "No" box if mother is not Spanish/Hispanic/Latina)

☐ No, not Spanish, Hispanic/Latina

☐ Yes, Mexican, Mexican American, Chicana

☐ Yes, Puerto Rican

☐ Yes, Cuban

☐ Yes, other Spanish/Hispanic/Latina

(Specify) _____

What is the problem?

- Hispanic checked with Mother's Hispanic Origin:

  - 191,434 births in 2013

- Mother is Hispanic but put into the "Race:Other:Specify" field:

  - 28,539 births in 2013

- That's 7.2% of Hispanics that we are not counting.

What About "Other"?

- White, Non-Hispanic, Not Multi-racial

- Black/African-American, Non-Hispanic, Not Multi-racial

- Hispanic= All listed in "Origins"

- Other, Non-Hispanic
  - = American Indian, Alaska Native, Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, Native Hawaiian, Guamanian/Chamorro, Samoan, **all "Other" races and all multi-racial choices, (also includes unknowns)**

What's New?

- White, Non-Hispanic, Not Multi-racial

- Black/African-American, Non-Hispanic, Not Multi-racial

- Hispanic = All listed in "Origins"

- **Asian, Non-Hispanic, Not Multi-racial**
  - **= Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, and All "Other Asian Specify"**

- Other, Non-Hispanic
  - = American Indian, Alaska Native, Native Hawaiian, Guamanian/Chamorro, Samoan, all "Other" races, multi-racial choices, and "Unknowns"

What is a Week?

*   Date of Last Normal Menses Began

*   Obstetric Estimate of Gestation (completed weeks)

What is Missing?

- For the Birth Year 2013:
  - 15,735 records did not have a complete date on the "Last Normal Menses Began":
    - 8,281 missing the day portion
    - 15 missing the month portion
    - 3,774 missing both month and day
    - 3,665 were blank

- Out of 395,781, 4.0% of births records for 2013 that occurred in Texas cannot be used to determine if a baby was born premature or not.

What did she do?

*   Calculating the weeks from the Date of Last Normal Menses Began to the date of birth, we get numbers all up and down the scale.

*   The largest number being 616 weeks. That's 11.84 years!!

*   The smallest was 1 week that gave birth to a 8 lbs. 16 ozs. baby.

What is lower income?

- Mother's Education Level

- Mother's Marital Status

- Did mother get WIC food for herself during this pregnancy?

- Intended source of payment for this delivery

What We Don't Know…

- C
- C HIP
- C HIPS
- CCHC
- CH
- CHP
- FEDERAL

- J
- M
- MA
- MCARE
- MED
- N
- NI

- P
- PEDING
- PENDING
- PRI
- QMP
- S

- If the drop down box for "Prenatal Care?" is "Unknown",

- And "Number of Prenatal Visits" is '44',

- Which variable is accurate?

What is Caring?

- Prenatal Care is "Yes" and yet:
  - Date of First Visit:
    - 5.68% Unknown
  - Date of Last Visit:
    - 4.37% Unknown
  - Number of Visits:
    - 0.98% Unknown

- For a Total of 5.19% Records missing data!

What are you saying?

- The NCHS-NVSS reported that five hospitals from over the 300 hospitals in Texas in 2013 that had live births, had reported:

  - 97.4% of all External Cephalic Version (that were either successful or failed) that occurred in Texas.

- But had reported only 0.05% of all Non-vertex presentations.

What is the Story?

Fetal Presentation at Birth	Final Route and Method of Delivery			
	Vaginal/ Spontaneous	Vaginal/ Forceps	Vaginal/ Vacuum	Cesarean
Cephalic (Head First)	218,671	2,098	6,018	110,806
Breech	1,209	43	26	11,511
Other	10,622	76	444	9,492

Thank You!

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512.776.2724

For Data Requests:

Email: VSTAT@dshs.state.tx.us

or CALL 512.776.7509

Other Information:

CDC-NCHS-NVSS:

http://www.cdc.gov/nchs/nvss.htm